THE FARM INDEX
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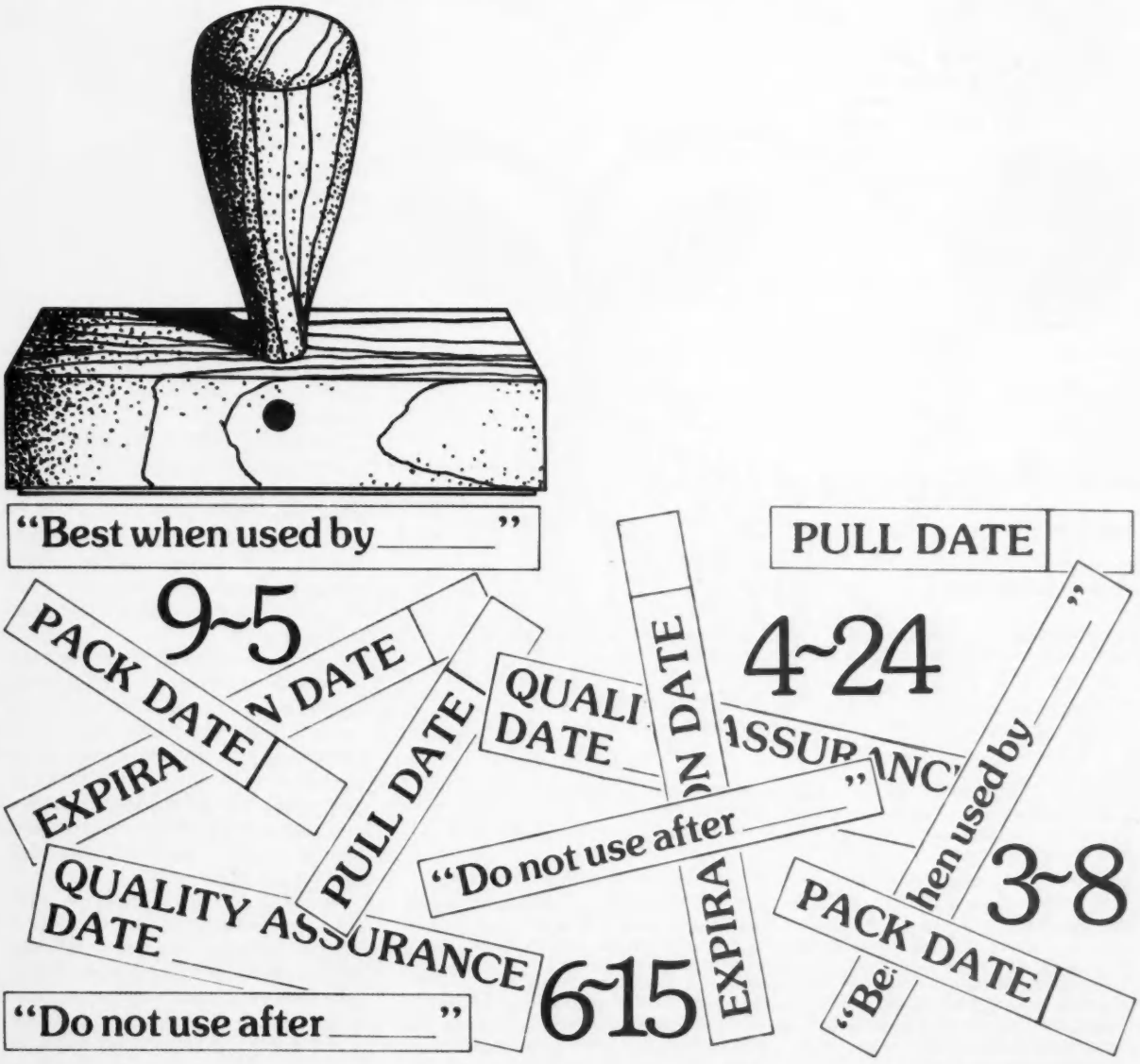

Processors Talk About Open Dating

Contents

Features

Land of Opportunity 3
This first installment in the three-part series, *American History: Rooted in the Soil,* relates the vital role of agriculture in establishing and shaping the young Nation.

Farm Finance '76 10
Regional rundown of how farmers and financiers size up agriculture's prospects in the year ahead.

The ABC's of Marketing Margins 12
ERS statistical terms, such as "price spreads" and "farm food marketing bill" are probed, explained, and simplified.

Processors Talk About Open Dating 16
Survey of food processors shows they're marching to different drummers in using and explaining open dates to consumers.

Rural Rental Blues . . . And What To Do About Them 18
Places to rent in the country are often scarce and less than modern, but an ERS study holds out hope for the situation.

Costs Behind the Farmer's Crops 19
How much it costs a farmer to produce his crop depends on the crop and where he's growing it, an ERS survey shows.

Departments

Outlook 2

Recent Publications 22

Economic Trends 23

Martin Schubkegel, Editor

Daniel R. Williamson, Associate Editor; Virginia Broadbeck, Dorothy Mayes, Martha Newton, Staff Editors; James Schleyer, Art Director.

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Outlook

It's a bit early in the year to get a firm fix on changes in grocery prices for 1976. Nevertheless, odds are good that prices won't advance at last year's pace, weather cooperating.

The Bureau of Labor Statistics has reported that retail food prices climbed 8½ percent in 1975. That's way down from the rates of both 1974 and 1973 when price increases skipped along at over 14 percent.

This year's growth could average "well under" the 1975 figure, ERS economists predict, assuming favorable weather during the 1976 growing season here and abroad. Bad weather would again put upward pressures on retail food prices, especially in 1977.

Meantime, it looks as though retail prices will be up 1 percent between now and June, following a rise of an equal amount in the first quarter.

Most of the creep in grocery prices will reflect steeper charges along the marketing chain, although bigger tags on fishery items and imported foods will also count in the overall price gain.

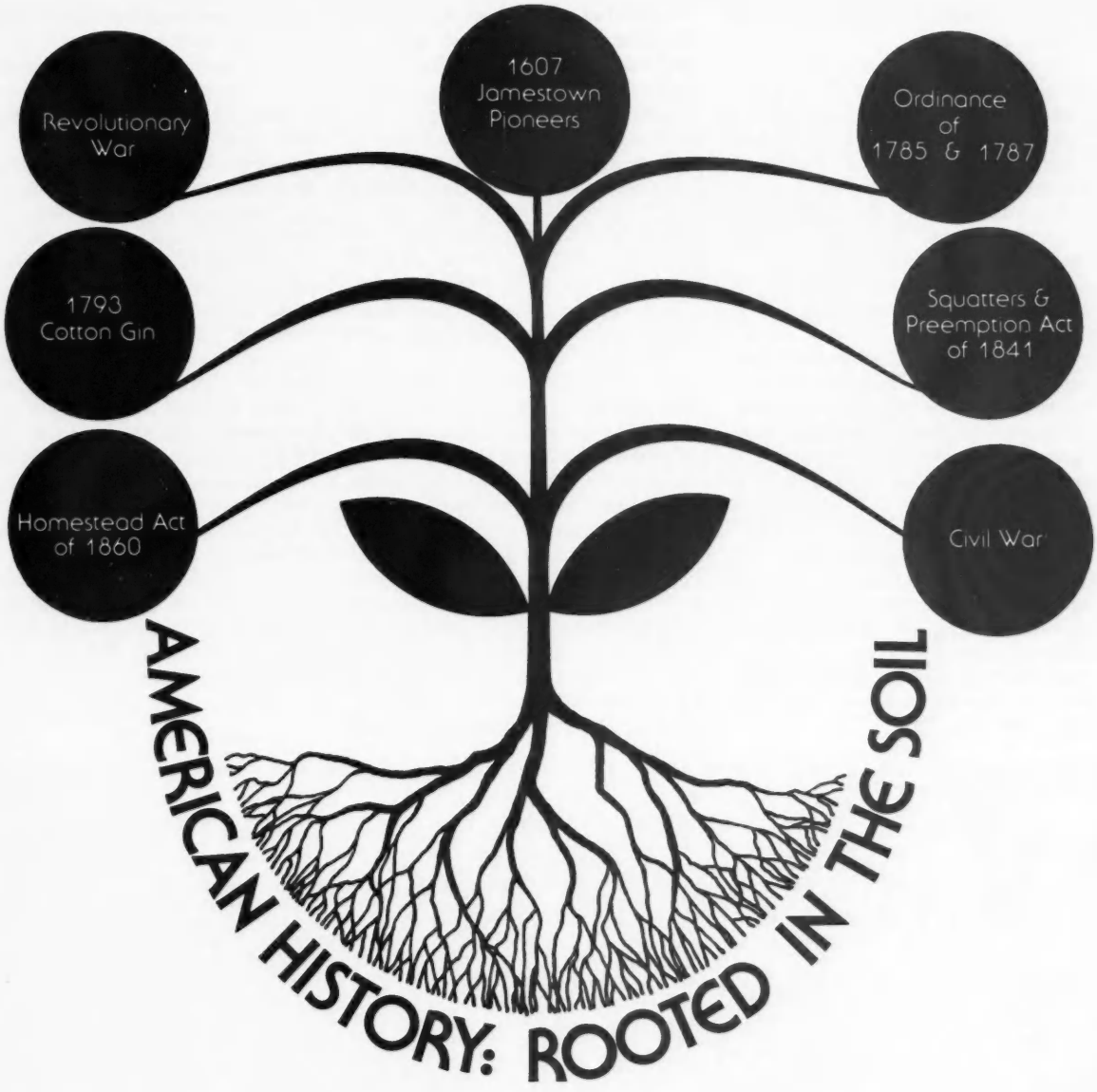
Here's a brief rundown of what we might expect for some commodity groups:

Red meats. Retail prices are seen close to what we paid last fall in first half 1976, with increases in beef and veal about offsetting drops in pork.

Dairy and poultry. Dairy, steady prices through the spring; broilers, little change through June; turkeys, some strengthening; eggs, higher until Easter, then easing off.

Fruits and vegetables. Expect big leaps for potato prices, maybe 50 percent higher in the first half than a year ago. Other fresh vegetables will show seasonal gains, averaging about a tenth more than in January-June 1975. Fresh fruit prices may be moderately below year-earlier levels. Processed fruits and vegetables, some downward pressure in the first half of the year.

For cereal and bakery products, retail prices to remain firm in the first 6 months, but *sugar and sweets* will inch up after falling throughout most of 1975. Look forward to small declines in prices of *fats and oils.* On the beverage scene, *coffee* prices are feeling the effects of severe frost damage to Brazil's groves in 1975, and sizable price jumps are in the offing.



Land of Opportunity

American history is rooted in the soil and nurtured by agriculture. Time and again, agrarian ideals and agricultural concerns have determined the Nation's course and shaped the country. After looking in the past several issues at the farmer's contributions to U.S. heritage, Farm Index now begins a three-part series focusing on the overall impact of agriculture on American history.

In the beginning, when English settlers stepped onto the bank of the James River in 1607, the wilderness blanketed much of the continent. Teeming with wildlife, guarded by fierce Indian warriors, it must have seemed as eerie and unconquerable as the surface of a distant planet.

Yet, only 369 years later, the land has been harnessed to produce the

greatest agricultural wealth man has ever seen.

To restless Americans, 369 years seem interminably long. But, in the context of history, it is a brief and spectacular era of achievement in which an "upstart" Nation performed a miracle.

Rags-to-riches. The story of American agriculture is in a sense, the ultimate Horatio Alger story of rags-to-riches American success that has long fueled dreams. This is how that story begins:

In 1607, American Indians watched a curious spectacle unfold as a band of English settlers hacked into the wilderness to clear a small enclave beside the James River to establish the first permanent English settlement in North America at Jamestown, Virginia.

While other Europeans, such as DeSoto, Ponce de Leon, Cabot, Cartier, and Coronado had explored and sometimes exploited the continent, these strange Englishmen became more intent on plowing than plundering, or searching for cities of gold and fountains of youth.

Harmless Englishmen. The Englishmen may have appeared harmless enough, since they didn't march arrogantly into Indian villages to pillage, but the Indians learned too late that the plow was far more deadly than the sword.

Confident of their centuries-old agricultural tradition, the settlers blithely broadcasted wheat seed over old Indian fields, planted English vegetables, and tried tropical crops.

That early confidence, born of optimism and ignorance, was soon shattered as alien seeds and European know-how proved impotent. With successive crop failures in 1609 and 1610—settlers appropriately called it the "starving time"—the fate of American agriculture reached its first crisis. The colony could survive only if it became agriculturally self-sufficient, since no one could depend on timely arrivals of ships from across a wide and treacherous ocean.

Swallowing their pride, the Englishmen bought, begged, and stole food from the Indians as they desperately searched for a solution. Finally, they perceived the answer: Indians successfully raised enough food for themselves and for their hungry new neighbors. Therefore, Indian crops and techniques were perfect for the climate and soil of Virginia.

Export crop needed. After adopting those strange crops and techniques in the summer of 1610, Jamestown survived—at least temporarily. But, to be successful, the colony had to face a second crisis: to find an export crop.

In 1613, John Rolfe planted "Orinoco" tobacco from Trinidad. This variety proved popular in the English market, so other farmers quickly adopted the variety to share the success. As Englishmen puffed away on their pipes, they insured Colonial agriculture a foothold in the New World.

Encouraged by Jamestown's success, other settlers crossed the ocean to establish other colonies.

Harsh New England. Some of the new settlers found a less hospitable land. New England colonists quickly adopted Indian techniques, but the

(Continued on page 6)

The leafy salvation of the Jamestown colony — tobacco farming — is shown in this painting of the first successful English colony in the New World. The photo was provided by National Park Service's Colonial National Historical Park. Painting is by Sydney King.

THE INCONVENIENCIES

THAT HAVE HAPPENED TO SOME PERSONS WHICH HAVE TRANSPORTED THEMSELVES

from *England* to *Virginia*, vvithout prouiſions neceſſary to ſuſtaine themſelues, hath *greatly hindred the Progreſſe of that noble Plantation: For preuention of the like diſorders* hereafter, that no man ſuffer, either through ignorance or miſinformation; it is thought requiſite to publiſh this ſhort declaration: wherein is contained a particular of ſuch neceſſaries, *as either priuate families or ſingle perſons ſhall haue cauſe to furniſh themſelues with, for their better ſupport at their firſt landing in* Virginia, *whereby alſo greater numbers may receiue in part, directions how to prouide themſelues.*

Apparrell.

Apparrell for one man, and ſo after the rate for more.

	li.	s.	d.
One Monmouth Cap	00	01	10
Three falling bands	—	01	03
Three ſhirts	—	07	06
One waſte-coate	—	02	02
One ſuite of Canuaſe	—	07	06
One ſuite of Frize	—	10	00
One ſuite of Cloth	—	15	00
Three paire of Iriſh ſtockins	—	04	—
Foure paire of ſhooes	—	08	08
One paire of garters	—	00	10
One doozen of points	—	00	03
One paire of Canuaſe ſheets	—	08	00
Seuen ells of Canuaſe, to make a bed and boulſter, to be filled in *Virginia* 8.s.	—	08	00
One Rug for a bed 8. s. which with the bed ſeruing for two men, halfe is			
Fiue ells coorſe Canuaſe, to make a bed at Sea for two men, to be filled with ſtraw, iiij.s.	—	05	00
One coorſe Rug at Sea for two men, will coſt vj. s. is for one	—	—	—
	04	00	00

Victuall.

For a whole yeere for one man, and ſo for more after the rate.

Eight buſhels of Meale	02	00	00
Two buſhels of peaſe at 3.s.	—	06	00
Two buſhels of Oatemeale 4.s. 6.d.	—	09	00
One gallon of *Aquauite*	—	02	06
One gallon of Oyle	—	03	06
Two gallons of Vineger 1.s.	—	02	00
	—	—	—
	03	03	00

Armes.

For one man, but of halfe of your men haue armour it is ſufficient ſo that all haue Peeces and ſwords.

One Armour compleat, light	—	17	00
One long Peece, fiue foot or fiue and a halfe, neere Muſket bore	01	02	—
One ſword	—	05	—
One belt	—	01	—
One bandaleere	—	01	06
Twenty pound of powder	—	18	00
Sixty pound of ſhot or lead, Piſtoll and Gooſe ſhot	—	05	00
	—	—	—
	03	09	06

Toules.

For a family of 6. perſons and ſo after the rate for more.

	li.	s.	d.
Fiue broad howes at 2.s. a piece	—	10	—
Fiue narrow howes at 16.d. a piece	—	06	08
Two broad Axes at 3.s. 8.d. a piece	—	07	04
Fiue felling Axes at 18.d. a piece	—	07	06
Two ſteele hand ſawes at 16.d. a piece	—	02	08
Two two-hand ſawes at 5. s. a piece	—	10	—
One whip-ſaw, ſet and filed with box, file, and wreſt	—	10	—
Two hammers 12.d. a piece	—	02	00
Three thoucls 18.d. a piece	—	04	06
Two ſpades at 18.d. a piece	—	03	—
Two augers 6.d. a piece	—	01	00
Sixe chiſſels 6.d. a piece	—	03	00
Two percers ſtoched 4.d. a piece	—	00	08
Three gimlets 2.d. a piece	—	00	06
Two hatchets 21.d. a piece	—	03	06
Two froues to cleaue pale 18.d.	—	03	00
Two hand bills 20. a piece	—	03	04
One grindleſtone 4.s.	—	04	00
Nailes of all ſorts to the value of	02	00	—
Two Pickaxes	—	03	—
	—	—	—
	06	02	08

Houſhold Implements.

For a family of 6. perſons, and ſo for more or leſſe after the rate.

One Iron Pot	00	07	—
One kettle	—	06	—
One large frying pan	—	02	06
One gridiron	—	01	06
Two ſkillets	—	05	—
One ſpit	—	02	—
Platters, diſhes, ſpoones of wood	—	04	—
	—	—	—
	01	08	00
	—	—	—
For Sugar, Spice, and fruit, and at Sea for 6. men	00	12	06
So the full charge of Apparrell, Victuall, Armes, Toules, and houſhold ſtuffe, and after this rate for each perſon, will amount vnto about the ſumme of	12	10	—
The paſſage of each man is	06	00	—
The fraight of theſe prouiſions for a man, will bee about halfe a Tun, which is	01	10	—
	—	—	—
So the whole charge will amount to about	20	00	00

Nets, hookes, lines, and a tent muſt be added, if the number of people be greater, as alſo ſome kine.

And thus is the vſuall proportion that the Virginia *Company doe beſtow vpon their Tenants which they ſend*

Whoſoeuer tranſports himſelfe or any other at his owne charge vnto *Virginia*, ſhall for each perſon ſo tranſported before Midſummer 1625. haue to him and his heires for euer fifty Acres of Land vpon a firſt, and fifty Acres vpon a ſecond diuiſion.

Imprinted at London by FELIX KYNGSTON. 1622.

Enterprising English merchants distributed such lists of necessities to prospective Virginia colonists, perhaps hopeful of a modest profit. Note the reference at the bottom to the "headright" provision of 50 acres of land to settlers who pay their own passage.

rocky soil and the harsh climate restricted farming so that export crops couldn't be raised. So the New Englanders became seamen, shipbuilders, and merchants, settling in towns and villages, and farming small acreages to meet their immediate needs.

Colonists in the Mid-Atlantic area found plentiful land, laced with navigable streams. But they encountered a man-made obstacle: much of the land was already owned by a few individuals who had received royal grants. The owners were interested in selling or renting the land, and not in developing it. Thus, settlers were denied the freedom of clearing and claiming precious acreage.

Great labor shortage. Despite the problems of a strange new land and all too familiar ancient laws, colonies were successfully established along the Atlantic coast. But soon a new problem faced the infant American agricultural industry: a great labor shortage. The land was so vast and settlers were so few that the land's potential was scarcely scratched. Great wildernesses waited, untapped, for axes and plows to tame them.

The British government astutely saw the potential for adding to the wealth of the empire while relieving crowded conditions in England. So the government and the companies to which the colonies had been granted promptly encouraged immigration by establishing "headrights" of 50 acres for each person transported to Virginia and some of the other colonies. If the settler paid his own way, then he received his headright of land.

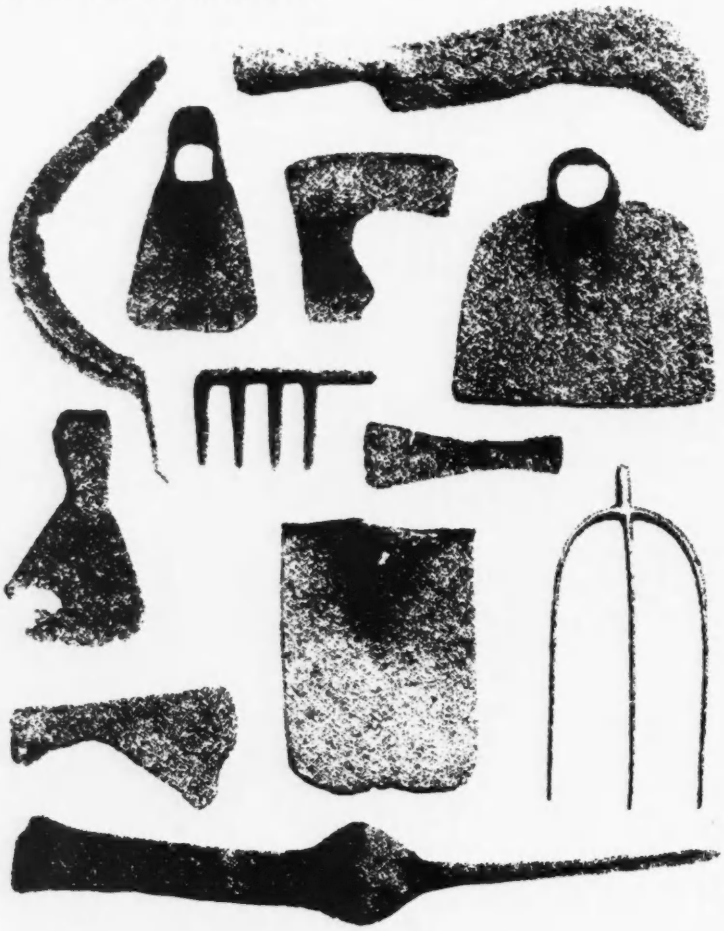
Cunning colonials. Some colonists were equally astute. They exploited the system by taking advantage of the provision in which the headright was assumed by the person who paid the passage, whether for an indentured Englishman or for an African slave. Thus by importing vital labor, the colonist received 50 acres of additional land, and an indentured servant or a slave to work that land. The indentured servant had to work a specified time for the colonist to repay him for the fare. Slaves had no assurance of eventual freedom.

A tragic offshoot of the headright system was that it gave incentive for slavery and, in turn, it gave birth to the southern plantation system. Thus, a vital plan that insured agricultural success also sowed disastrous seeds for the future of the Nation-to-be.

Quitrent system. In the Mid-Atlantic colonies, arriving settlers faced an irritating problem that would feed discontent against the Crown. Holders of the large land grants had instituted a "quitrent" system. Quitrents, a vestige of the feudal system, required payment of a fee in lieu of personal services to the lord of the manor. Thus the settlers—

Jamestown Artifacts

Some 4½ centuries ago, when these tools were newly purchased from English merchants, they carved out the first enclave of agriculture for the colonists. The labor that they performed literally cleared the way for the tide of settlers who followed, after Jamestown succeeded in not only providing food for survival, but crops for export. The tools are in the custody of the National Park Service's Colonial National Historical Park, Yorktown, Virginia.



cast into the roles of medieval serfs—were expected to give a slice of their profits to a wealthy person who had done nothing to earn it.

In a sense, the quitrent system spurred the development of lands to the west. Many independent-minded farmers pushed into frontier lands and established farms without the formality of buying or renting the land. If the owner managed to evict the settlers, they simply moved farther west.

Land of hope. Even without the attraction of headrights and the westward shove of quitrents, the lure of the vast fertile lands of the New World proved irresistible to many Europeans. In the Europe of the 17th and 18th centuries, farmers had little hope of acquiring land unless they inherited it. The American wilderness was their great chance to own the soil that they farmed. So, they immigrated. They jammed into the coastal colonies, then pushed into the wilderness to carve out a future where none had existed before.

Fleeting victory. To the north, France also coveted the land, but Frenchmen were more interested in fur trading than in farming. A bitter war erupted, and the French and their Indian allies were defeated by the British and the Colonial militia. But, before the jubilant settlers could pour into western lands opened up by the victory, the British forbade settlement west of the Allegheny Mountains in an attempt to pacify Indians and protect the fur trade.

Never particularly responsive to British edicts, settlers ignored such restrictions and pushed across the mountains anyway. But, the law was still a bitter affront to the Americans. As trade restrictions piled atop land restrictions, the Colonies rose up in the American Revolution and colonial farmers swelled the ranks of patriot armies to oust the British rule and establish a government that favored agricultural growth.

European markets. As the smoke cleared from the battlefields, the new Nation was forced to negotiate separately with each European nation for a place in that country's markets. Fortunately, Europe was industrializing, and its population was booming. Thus, American agricultural products found eager customers abroad.

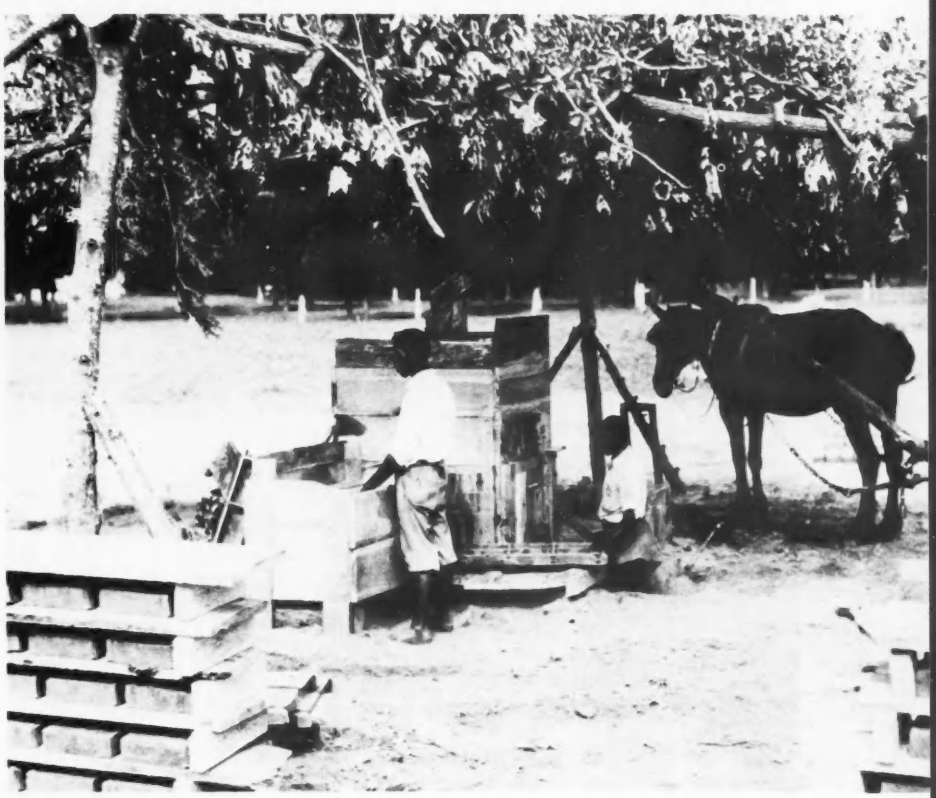
At this point, agriculture was well established as the backbone of American economy. But, while man-made problems such as trade restraints and boundaries were largely overcome, the post-Revolution agricultural industry ran into Mother Nature's awesome obstacles.

Crops are plagued. Insects, plant diseases, and soil depletion began to plague farmers in older areas that had first been cleared. Two prominent Virginia farmers, George Washington and Thomas Jefferson, bewailed these problems in their diaries. Tidewater Virginians and Marylanders shifted from tobacco to wheat as a staple export crop, and experimented with new crops, varieties, and cultural practices in an effort to solve these problems.

Less than 200 years after they abandoned Old World techniques for Indian methods, Americans again turned to Old World agriculturalists through correspondence to seek solutions. Those who traveled to Europe returned with seeds, plants, and animals to try out.

Agricultural societies. With these common problems, some joined agricultural societies. Most members of these early societies were well-educated, wealthy men who could afford to travel, correspond, and experiment. Few small farmers participated in the societies, or were influenced by them.

The common farmer was, instead, interested in the orderly settlement of new lands. The government obliged by passing the Ordinance of 1785, which provided for the surveying of



This re-enactment of brick making at the Wakefield, Virginia, plantation illustrates the rise of the slave-based plantation system that laid the seeds of the Civil War.

the West into townships, each containing 36 sections of 1 square mile. These sections were then offered at an auction, with one section reserved for public schools.

Organizing settlements. The Ordinance of 1787 divided the land between the Ohio and Mississippi Rivers into territories that would become States on equal terms with the original States when their populations reached a certain level. Settlers were protected by a bill of rights and slavery was banned.

Lands were sold for cash at auction for a minimum $1 per acre. There were few buyers, since settlers brave enough to tackle the land lacked cash or credit. With the same contempt for legal restrictions that characterized colonial settlers, the farmers simply became "squatters" who occupied land without the formality of having legal title to it.

Land speculators. Soldiers of the Revolutionary War and, later, the War of 1812, were given land grants in the form of land script. Much of this script was sold for a fraction of its face value to speculators. Some acquired great amounts of land script which they redeemed at face value for western lands. The actual settlers in the West began a campaign for liberalizing land sale laws and credit availability that eventually culminated in the Homestead Act of 1862.

The "squatters" also won out in the end with the Preemption Act of 1841, which allowed a person who had settled the land to buy it at the minimum price when it was offered for sale. The Homestead Act gave 160 acres of the public domain to anyone who was the head of a family or over 21 years old on the condition that he live on it for 5 years and improve it.

Seeds of war. Meanwhile, as the West was being settled, the seeds of the Civil War were taking root in the South.

At the time of the Revolution, the institution of slavery was possibly dying. While moral objections made some slave owners such as Jefferson uncomfortable, the economic considerations were harshly evident: slavery had become unprofitable.

Jefferson, who unlike most of his neighbors kept a close eye on costs and returns, figured out that during a year of low prices for crops, it cost more to run his plantation than the crops brought in.

The cotton gin. Then, in 1793, a new invention unwittingly gave slavery new life. The cotton gin made cotton a highly profitable, labor-intensive

A simple plow: the Indian's most deadly enemy. Armed with such tools, hordes of land-hungry settlers poured onto the prairie.

Pioneer farm families toiled the fields together in a mighty effort to tame the land and carve out a future from the wilderness.

crop. Cotton plantations were tailor-made for slave labor. Plantation agriculture then quickly spread wherever climate and soil would produce cotton. Suddenly, slavery had become an "economic necessity" in the South.

Meanwhile, the development of the vast agricultural lands became enmeshed in a whirling tangle of speculation, unstable prices, and boom or bust economics for farmer and land speculator alike.

Land speculators bought a great deal of land. More was granted to the States or to private companies for developing such necessities as schools and transportation. States and private companies, in turn, sold the land to farmers at prices comparable to those for public domain lands.

Boom or bust. Land speculators made or lost fortunes in these complexities. Farmers shared their fate through the unpredictability of weather and prices. Farmers of the North and West became dependent on the sale of their surplus and the purchase of textiles and metal articles.

Farm prosperity was cyclic. A farmer who started his farm near the onset of a prosperous cycle often prospered with good crop prices and increasing land values. Those who bought farms at the crest of the prosperity cycle often suffered from declining prices and land value decreases until they lost their farms.

The loss of a farm meant that the farmer often became a tenant or laborer. Or the evicted farmer could move west and establish a new farm as a squatter or, later, as a homesteader. It was a chaotic time at best.

Pushing westward. Despite the hardships and the uncertainties, wave after wave of settlers pushed across the Appalachian Mountains and onto the midwestern plains. Each of these successive waves had its own ethnic characteristics.

The first wave of settlers who colonized the east coast were mostly from England, although the Dutch and Swedes also established communities. Next, many Germans fled religious wars to settle in the middle colonies. Then the Scotch-Irish, who had colonized Northern Ireland, came to northern and middle colonies. Irish followed in great numbers after the Irish potato famines of the 1850's. The Irish settled in cities.

Once the source of invaluable agricultural knowledge, the American Indian became an obstacle to the land and was shunted aside.

Still more Germans came during the 1800's, searching for more farmland. Then came more Swedes, Danes, and some French and Swiss. In the mid-1800's, many Russians came.

Refugees and dreamers. Regardless of nationality, the immigrants were mostly refugees who were driven from their homes by wars, famine, or religious persecution, or who saw the new Nation as their chance to win economic and social independence. America was the great land of opportunity—or opportunity of land.

Like their eastern predecessors, the western farmers soon faced natural problems, as soon as such man-made problems as hostility with Indians and the obstacle of perilous transportation were solved.

Farmers and blacksmiths worked together to develop new or better tools. The mechanical inventions, such as the steel plow, mowing machine, grain drill, cultivator, reaper, and threshing machine, were developed in local blacksmith shops in response to farmers' needs.

A new revolution. As farmers battled the sticky soil of the prairies, the stage was being set for the "first agricultural revolution," which would be fought in the 1830's and continuing for four decades, with horses and steel plows.

As the mid-1800's came, American agriculture had become established and prosperous. The Indian was no longer a source of agricultural expertise, but, instead, he was a barrier to the land. As such, the farmers would shove him aside in bloody battles.

The single-crop plantation system, built on slavery, neared a climactic showdown that would instigate the Civil War.

Government help. And the government, which had carefully avoided direct intervention in free enterprise, would soon take an active role in helping farmers in the struggle to tame the land.

While these earth-shaking confrontations headed toward their bloody solutions in which cannon would thunder in the East and cavalry would sweep across the West, the agricultural revolution evolved without fanfare.

This "revolution" that would astonish the world with its abundant bounty of food and fiber would be led by a humble horse.

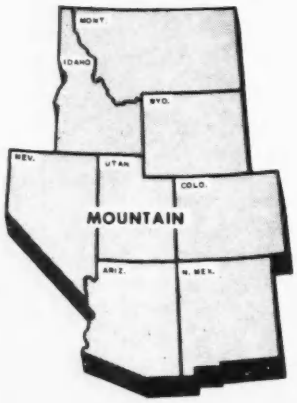
[Based on the manuscript, *American Agriculture: From Wilderness to Bread Basket*, by Wayne D. Rasmussen and Jane M. Porter, National Economic Analysis Division.]

Farm Finance '76

The financial profile of American agriculture is looking good. Farmers' assets, moving into the new year, approached $600 billion—a gain of around 14 percent from the start of 1975. Proprietors' equities were $65 billion greater than a year earlier, or more than double the farm income estimated for 1975. And unlike last year at this time, improvements in financial position are spread pretty evenly across the board...both crop and livestock producers are doing better. Also, lenders show increasing interest in extending credit to the farm sector. More good news—jumps in interest rates should be leveling off. Here's the outlook for the 10 farming regions as given by our on-the-scene reporters.

Livestock woes. On the whole, Pacific Coast farmers entered 1976 in good shape financially, but there's always the exception. Livestock producers—especially those with cow-calf operations—weren't doing so well. Even if livestock prices snap back as expected, it will be some time before producers get back in the black. Many cattlemen went deeper in debt in recent years...more than their earnings could support. Now they're trying to reduce yearly payments by stretching out existing debt over several years.

Vegetable and fruit growers, by contrast, are better off, namely, the ones who forward contract their sales. Outlook is cloudy for grape and apple producers, however. Grape output will probably go up in 1976 as added acres come into bearing, and prices are apt to weaken. Story is similar for the apple industry. Overproduction in 1975 signals growers that prices will weaken early in the year. But on balance the region looks forward to fairly stable prices and a slowdown in cost increases compared to 1975.



What's next? Another year of uncertainty is how farmers in the Mountain region see 1976. Grain farmers fear prices will ease at a time when they expect little relief from higher input charges.

Feeder cattle prices are expected to stay relatively low but should turn up later in the year. Some cow-calf operators are shifting to cow-yearling operations for additional return, though for most ranchers this is not feasible as a shortrun proposition.

Farmers continue to buy land for farm enlargement, and land values should keep climbing. Lenders see few problems in meeting credit needs but there's some concern over future availability of funds for long-term commitments.

Cautious optimism. Most crop producers in the Northern Plains moved into 1976 on a sound financial footing, and voiced optimism about prospects for major crops. The big unknown is the prices they'll get for those crops, particularly what lies in store for prices for farm exports, and this region depends heavily on export markets for its income.

Grain yields could be shaved by the dry weather conditions prevailing last fall and early winter. Fall and winter grazing also suffered.

Elsewhere on the livestock scene, large marketings in recent months reduced cattle numbers. As the sell-off ceases, prices to producers should improve, though prices will fluctuate widely. Cow-calf operators may have some loan repayment problems but equity positions continue generally favorable.

Pulling the stops. Both wheat and feed grain producers in the Southern Plains are gearing up for maximum production in 1976. Expanded wheat acreage may provide a greater feed supply, thus helping boost beef production. Expansion rates for cattle numbers and nonfed beef output exceeded expectations in recent years.

Cotton growers may experience some problems in getting credit this year. Producers of grain sorghum, wheat, corn, rice, and citrus will fare much better. Outlook for sunflower growers is good, provided they can negotiate forward contracts at favorable prices.

Drought danger signals are flying now, though, and improved weather is needed.

Better days for dairy. With milk prices on the rise and feed costs advancing more slowly, dairymen in the Lake States look forward to increased milk production and higher incomes in 1976. Dairy enterprises provide about a fourth of this region's income from farming. Conditions will likely get better for beef and hog producers also. Cattle prices should strengthen at a time when feed prices moderate.

Farmland values will continue to head upward, as will farmers' net worth if incomes gain as expected. Farmers in general should be in good shape to repay debts.

Opportunities for off-farm income may be greater than last year as activity perks up in the auto industry and other parts of the economy. Rising incomes will spur demand for many of this region's agricultural commodities.

Back to cotton. After making big shifts from cotton to soybeans and rice in 1975, Delta farmers have had a change of heart as cotton prices bounced back. And 1976 cotton plantings in this region are likely to expand.

It looks like another so-so year for the Delta's cow-calf producers. Despite expectation of stronger calf prices, high costs relative to calf prices may mean further selling of cows.

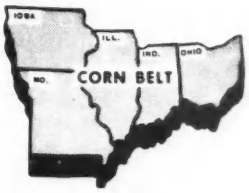
Broiler and turkey producers are in better straits than a year ago, as are egg producers. Net earnings should increase.

Supply of loan funds will prove adequate on the whole, with the exception of cow-calf operators and low equity farmers. They could have trouble meeting the security requirements of commercial lenders.

Another record? Yes and no. Corn Belt farmers expect to plant about the same acreage as in 1975, of itself a record. Weather will have to cooperate, however, to rack up another alltime high in grain production in this region.

Livestock people have a more certain future. Livestock prices are apt to improve on the average, even though hog prices are receding from their peaks as production starts to turn up. Cattle feeders are a bit edgy about what to expect in feed costs and in market prices, but their income/cost relationships should be more favorable than last year.

All told, improved net worths of farmers are likely to accompany the generally bullish picture for farm income in 1976.



Mixed prospects. Income-wise, livestock producers in the Southeast should gross more than last year, thanks to higher prices received for livestock and lower feed costs.

Crop producers won't do as well. Their incomes could be hurt by some further rises in production costs. Spending for farm machinery will increase due to higher prices, although number of units bought is expected to decline. Land values will probably keep rising; however, the rate of land transfers might show little change from 1975.

There'll be no shortage of loan funds, but lenders are concerned about price variations and ability of borrowers to repay. For the majority of lenders, greater price variability may require closer supervision of farm loans. Interest rates on farm loans, following the U.S. pattern, will stay up there.

Money's tight here and there. Getting operating funds from commercial banks is a problem for Northeast farmers, who have to compete with many non-farm borrowers. Farmers in 1976 may have to depend even more than in the past on Production Credit Associations and Federal Land Banks for their credit needs, according to reporters. Profits in dairy and poultry—major enterprises for the Northeast—should improve in 1976 if feed costs go down and farm prices go up.

Farmland prices soared nearly a fifth between March 1975 and a year earlier, and further gains seem likely.

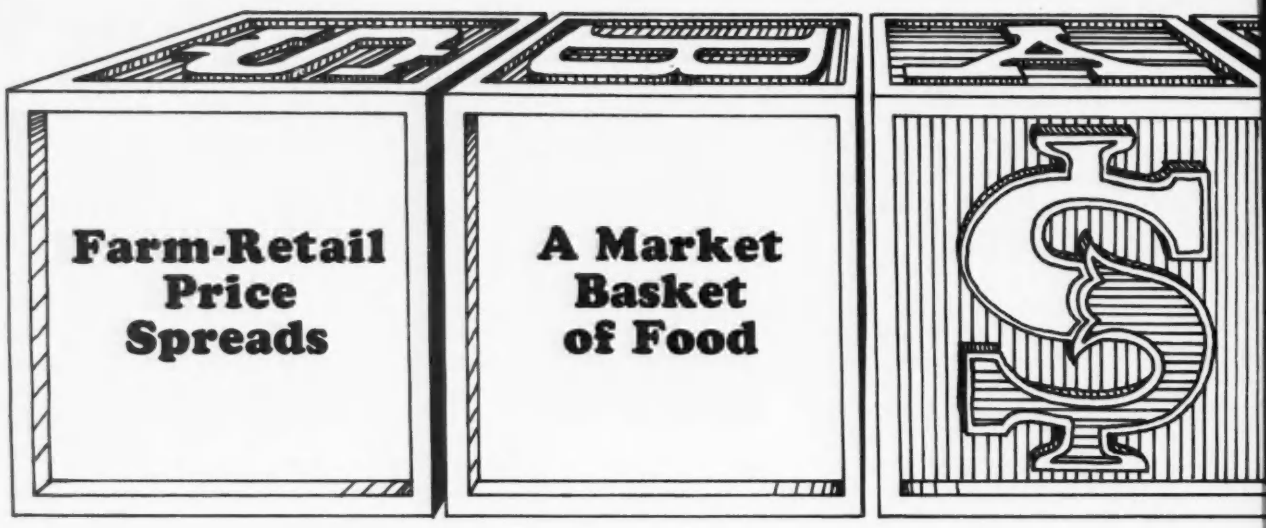
On the job scene, employment off the farm was hard to come by in 1975. Opportunities should be brighter this year, however, based on the outlook for the general economy.

Netting less. Grain farmers in the Appalachian region aren't rejoicing, what with depressed prices and the prospect of lower net incomes in 1976. Erratic changes in crop prices can be expected, and farmers will probably try to cushion the blow by storing more on the farm and by paying more attention to timing of marketings.

Livestock men, as in other regions, look forward to fatter profits and plan to increase production.

Though jumps in farmland values may lag behind 1975, urban folks will remain active bidders for small farms, offsetting lax demand from farm operators.

[Based on *Agricultural Finance Outlook*, AFO-16, Nov. 1975, National Economic Analysis Division.]



The ABC's of Marketing Margins

In these days of growing concern over where our food dollars are going, we're served a banquet of terms and concepts to describe the economic state of things. But how many of us really understand the language of the economists—What do they mean by "farm-retail price spreads," "a market basket of food," or "farm food marketing bill," much less how they're determined or of what value they are?

Price spreads. Take "farm-retail price spreads." ERS publishes them each month for 45 individual foods, including beef, pork, milk, eggs, apples, oranges, and bread.

In a nutshell, a farm-retail price spread or marketing margin is the difference between the retail price and farm value. It measures the assembling, processing, transporting, and retailing charges added onto the value of the farm product. In essence, it shows the consumer where his food dollar goes.

Some common misconceptions have arisen, however, over what the figures show. One of these is the tendency to think that as price spreads increase, profits go up. Not necessarily true.

The culprits. Wider spreads are often caused by higher costs of inputs such as labor, transportation, packaging, and other operating and overhead expenses of marketing firms.

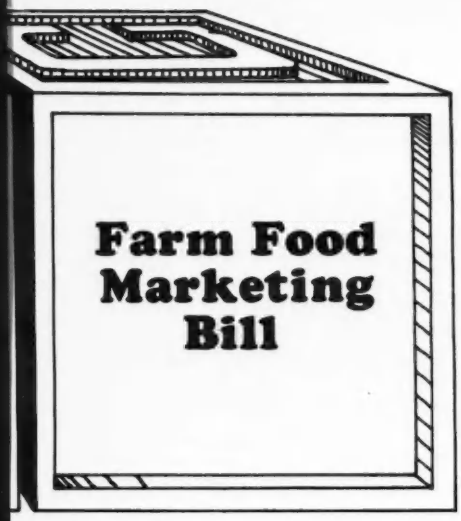
Moreover, wider spreads may reflect increased profits of one group of marketing firms—processors for example—but other groups such as retailers may have lost money.

Also, caution should be used in putting too much emphasis on monthly fluctuations. Rather, price spread data are much more effective in measuring long-run changes in the overall cost of food marketing.

Ups and downs. For the past 10 years, the farm-retail price spread has steadily widened, due to escalating prices and marketing costs. However, farm prices have zigzagged during the period, temporarily widening or narrowing the spread.

Retail prices generally change less frequently—and in smaller amounts—than farm prices. Retailers usually change prices no more often than once a week, except for special sales. Managers tend to hold off until they see definite trends in wholesale prices before raising or lowering their own prices. This lag results in alternate squeezes and widenings of farm-retail spreads in the short run.

No easy chore. Arriving at these spreads is no easy chore for the analysts:



Product selection. For example, when collecting figures on the price spreads on tomatoes, economists have to specify the form—fresh, canned, whole, stewed, ketchup, juice, paste, sauce, etc.—the size of can or bottle and the quality.

Farm value. The farm value of a food may not be as apparent as you might think. A product may not have a market price when it leaves the farm. Some items are grown under contract like broilers and vegetables. Or, a product may be sold after market pooling (like milk and citrus).

Retail value. Again this is not readily apparent in many cases.

The retail price can vary considerably, as some foods are bargain priced more often than others. Moreover, some stores offer special customer services—such as check cashing, carryout, and big parking lots—which are reflected in retail prices. In most cases, ERS uses the retail prices as estimated by the Bureau of Labor Statistics.

Conversion factors. Obviously, what the farm grows often bears little resemblance to what we buy in the supermarket. Also, there are wastes, losses, and byproducts to consider in the food processing and distribution chain.

A 1,000-pound Choice steer only yields 440 pounds of meat cuts. But for

The Missing $1.60

"Farm-retail price spreads" may sound like gobbledygook to you, but they do exist and your grocery bill reflects them.

For example, if you bought a T-bone steak at $2.00 a pound, a large part of what you paid falls between the farmer and your shopping bag. The farmer received only about 40 cents a pound for that steer from whence your T-bone came.

Why the gap? That's where farm-retail price spreads come into the picture. There are a lot of costs involved in transforming the animal on the hoof into steaks and other cuts in your supermarket.

Your T-bone starts out as part of a live animal—usually about a 1,000-pound steer. When the farmer sells the steer, let's say he gets 40 cents a pound or $400.

Then the animal goes to the packer and is dressed out to a 620-pound carcass. Not including any value added by the packer's services, the carcass is now worth 64.5 cents a pound.

The carcass must be cut and packaged for retailing, however. By the time some bone and fat are removed and some moisture and meat are lost during the process, only about 440 pounds of salable meat are left. This meat now has a value of about 91 cents a pound.

Processing, transportation, and marketing costs also have to be figured. Add to that 91 cents per pound about 8 cents for slaughtering; 4 cents for transportation from slaughter house to retail store; another 21 cents for labor to cut the carcass into retail cuts and package it for sale; about 5 cents for packaging material; and about 2 cents for advertising.

Add on a little profit for each of the firms along the line and you come up with a figure of about $1.40 a pound for the 440 pounds of usable meat.

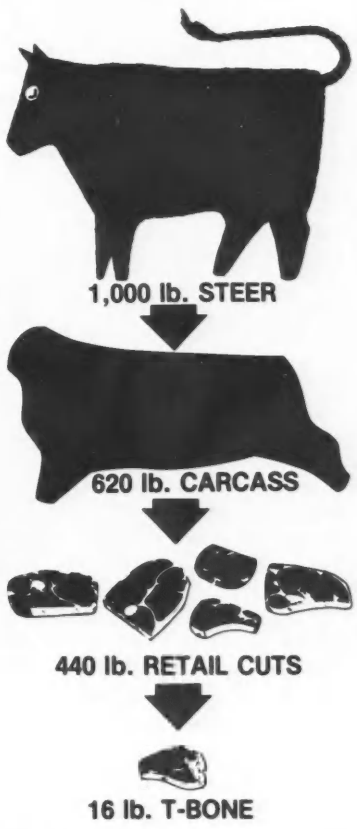
But how did that T-bone get up to $2.00 a pound?

Well, that steer we started with produced a mere 16 pounds of T-bone steak in the first place. The other 424 pounds of meat were mostly cuts that sell at lower prices than T-bone. Chuck steaks and roasts, ground beef, shanks, short ribs, and stew meat are good examples.

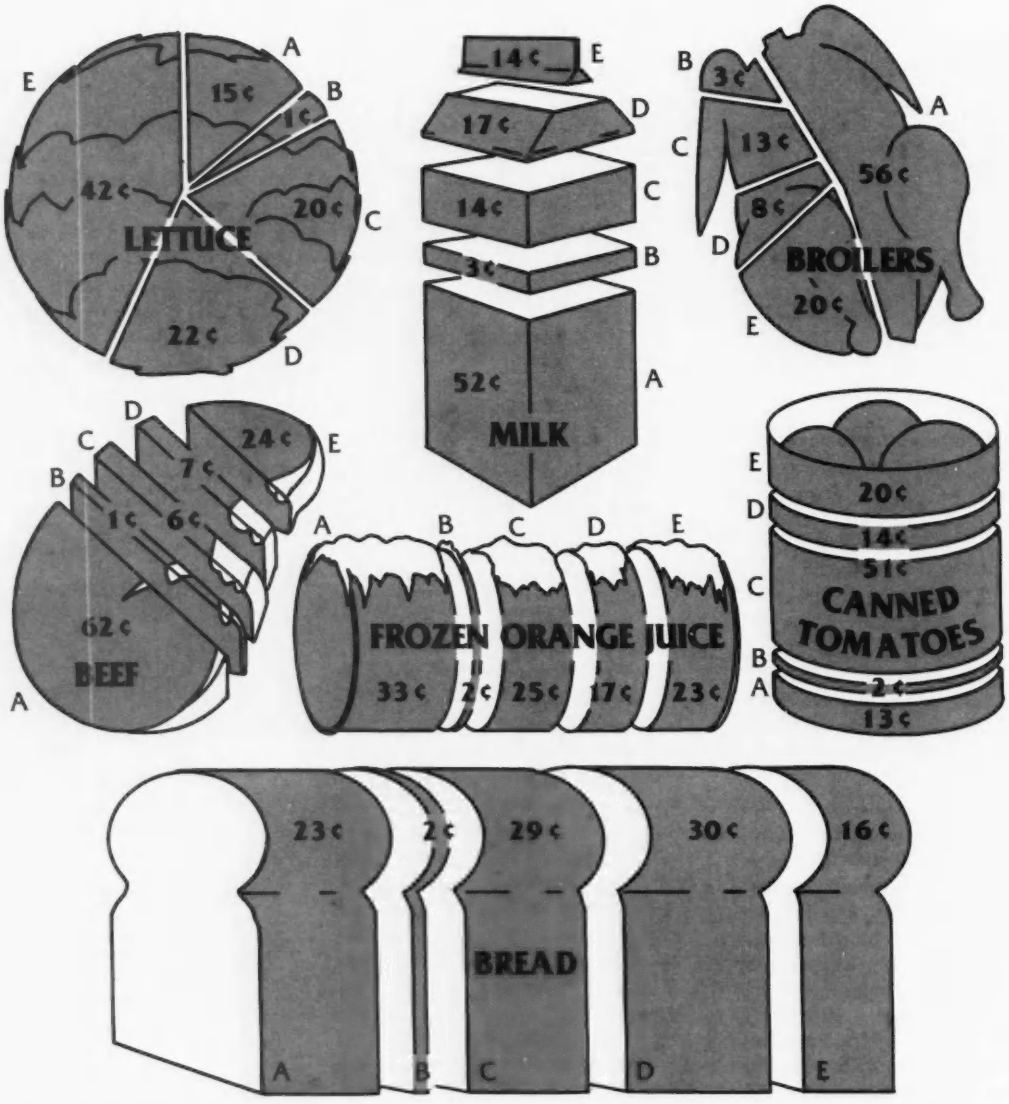
If you average out all the hamburger at, let's say 84 cents a pound, the T-bone at $2.00 a pound, and all other cuts at various prices, you come out with $1.40 per pound.

That's why the price the farmer receives per pound of live animal is so far from the price the consumer pays for meat in the supermarket. But then again, the conveniently packaged, ready-to-cook cuts of meat you buy in the supermarket are a far cry from that 1,000-pound live animal.

[Based on special material from Larry Duewer, Commodity Economics Division.]



WHAT THE FOOD DOLLAR PAYS FOR



A - PRODUCTION B - ASSEMBLY C - PROCESSING

D - WHOLESALING, TRANSPORTATION E - RETAILING

ESTIMATES ARE BASED ON 1974 PRICES, COSTS, AND MARGINS.

every dozen eggs sold, only 1.03 dozen are produced in the first place. Conversion factors, therefore, must be used in any breakdown of price spreads so that equivalent amounts of product are being compared at each marketing step.

Time lags. All products take awhile to move from the farm to the consumer—some longer than others. Since price spreads are based on the assumption of concurrent prices all along the marketing channel, this can be a problem.

Time lags vary not only among products but even for the same product, making any attempt to lag price spreads very difficult. Therefore, ERS does not use lags in its estimating procedures.

For instance, wheat sold by farmers must be transported to flour mills where it is ground into flour and shipped to bakeries where it is combined with other ingredients to make bread.

Inventories of wheat and flour obviously accumulate at flour mills, and bakeries maintain inventories of flour. In addition, forward contracting for flour and wheat insulates against price changes, and millers may offer "protection periods" before raising prices.

Farmer's share varies. In interpreting the farmer's share of the consumer's food dollar—last year it averaged 42 cents—remember that what the farmer gets varies greatly from product to product. In general, the more highly processed the product, the smaller the farmer's share and the larger the marketing margin.

Also, fresh fruits and vegetables, although not "processed" in the general sense (they don't change form), have wide marketing margins—nearly two thirds of the retail price. High marketing costs are mainly due to high shipping costs (caused by refrigeration, special handling, and long distances), perishability, and the cost of maintaining large display areas needed for fresh produce in stores.

Shares by product. The farmer's share of the consumer's food dollar is greatest for animal products—50-70 percent—such as beef, pork, butter, eggs, turkey, frying chicken, and milk.

For frozen concentrated orange juice, fresh apples, peanut butter, ice cream, lettuce, potatoes, and white flour, the farmer only gets 25-50 percent of the retail price. And for such highly processed items as cornflakes, cookies, frozen french fried potatoes, bread, and some canned goods like tomatoes, corn, and spaghetti, he gets less than 25 percent.

Share doesn't mean income. The farmer's share of the consumer's food dollar does *not* equal the farmer's income though. Farmers producing goods with a higher farmer's share on the marketing end do not necessarily make any more money than other farmers.

Moreover, the farmer's share concept is based on price, and a farmer's actual earnings depend on his cost of production and volume of product he sells. About four-fifths of his cash receipts go to pay his production expenses, with only the remaining fifth providing a return on his labor and investment.

The market basket. Perhaps one of the most frequently quoted marketing spread statistics is ERS's market basket series. It measures long-term variations in both overall food costs to the consumer, and the farmer's share of the food dollar.

The market basket is based on the quantities of food purchased by urban wage earners and clerical workers in 1960-61. The foods in the basket, as well as the quantity weighting scheme, are held constant for long periods of time so that long-run changes in the marketing spread will show up.

Basket mix. The market basket retail cost has frequently been incorrectly dubbed as the "average expenditure for food by U.S. families." But, in fact, it is actually less than what the typical family spends on food, because:

- It doesn't take into account food eaten away from home. (And more and more of us seem to be eating out these days.)
- It includes food expenditures by single persons as well as those by families.
- It excludes foods that aren't grown on U.S. farms, such as coffee, bananas, fishery products, and other imported foods.
- Its mix remains constant, not changing with consumer eating trends. (For example, we eat more beef today than we did in 1960.)

Marketing bill. Another ERS statistical series—the farm food marketing bill—does reflect changes in consumer eating habits. For example, when consumers eat out more often, less food is sold through grocery stores, and the character of the marketing bill changes. Also, when consumers buy more processed foods, the bill is affected—it goes up.

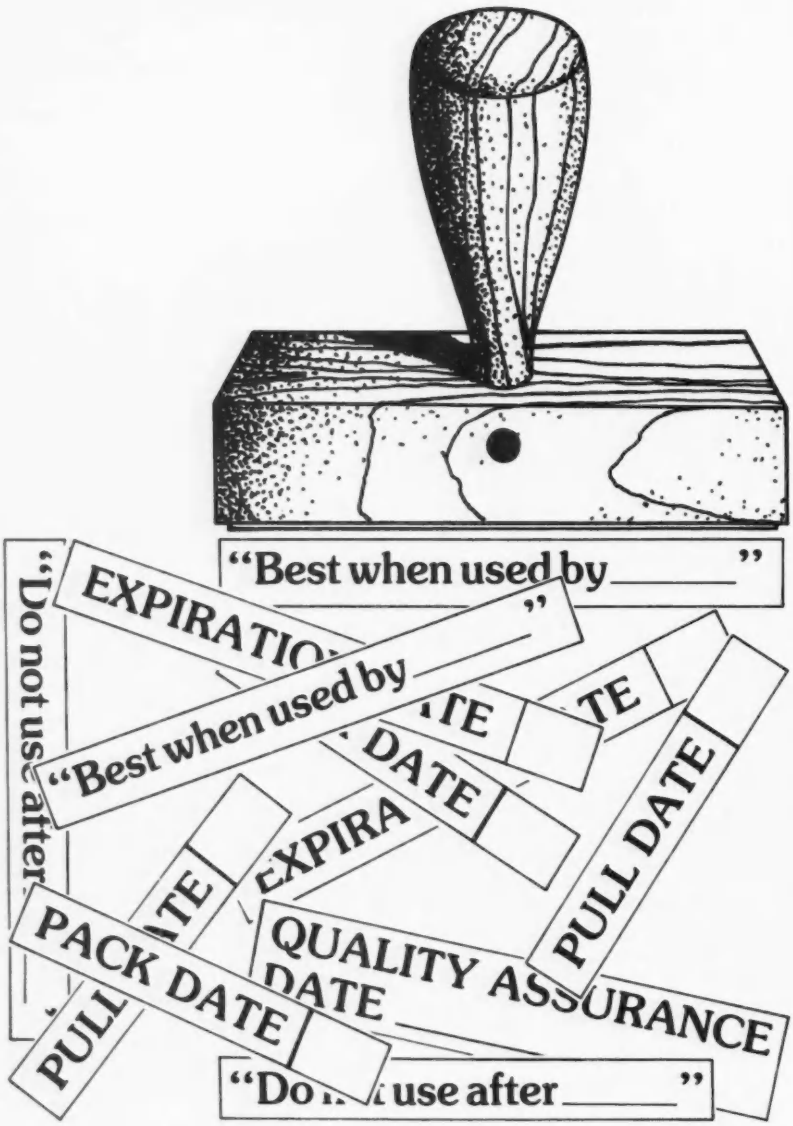
The bill itself is an annual estimate of charges for processing, transporting, wholesaling, and retailing foods produced on U.S. farms, whether sold in grocery stores or consumed in restaurants or other eating places—a total of over $99 billion in 1975. In addition, the bill is often broken down into "agency shares"—portions going to processors, wholesalers, food stores, and eating places.

Another breakdown is by individual cost factors, such as labor, packaging, transportation, profits, taxes, interest, repairs, depreciation, rent, and advertising. Labor, packaging, and transportation take the biggest bite—about 70 percent in 1975.

For further information. Price spread statistics are published in ERS's monthly *Agricultural Outlook* and quarterly *National Food Situation.* These reports give the most comprehensive scope on food prices and factors behind them. In addition, other situation reports are issued periodically on specific commodities—livestock and meat, dairy, vegetables, fruit, poultry and eggs, wheat, rice, and sugar and sweeteners.

[Based on "Who Gets the Food Dollar," speech by Harry H. Harp, National Economic Analysis Division, at the University of Georgia Student Chapter of the Institute of Food Technologists, Athens, Ga., January 14.]

Processors Talk About Open Dating



Unpacking the week's groceries, you open the door to the fridge and inspect the old lunch meat, produce, and anything else that might have gone bad since the last trip to the store.

Now comes the dilemma of thrift versus safety. You may be wasting untold dollars by consigning to the garbage pail food that's a little old, but otherwise wholesome. Then again, there's no point in running the risk of serving potentially dangerous food to your family.

Those calendar dates on the packages ought to be telling you something . . . except for the fact somebody forgot to enclose the instructions for deciphering the codes.

Six or seven years have passed since the Congress first proposed that "open dates"—intelligible to every shopper—be carried on all perishable foods. In the 1960's, however, hardly anybody knew scant on whether consumers would take to open dating, much less whether it would be practical and economical for the food industry.

Open dating assessed. ERS was summoned to come up with some of the answers, so it launched a series of studies on open dating. The latest concerns food processors—how widely are they using open dating and in what form. Next on the agenda is how retailers and consumers say they are reacting to it all. These reports are scheduled for release later this year.

In its survey of processors, ERS concluded: "The extent of open dating is encouraging for the shopper who wants date information to assist in a buying decision. But two problems remain for the shopper who wishes to use the information."

1. Processors did not use the same type of date in this survey on all products, or even on products in the same category. In fact, there were cases where the same firm failed to use the same types of dates on its own products.

2. Usually, the processor gave no explanation of the date on the label. Result: Confusion.

Reason: Processors are communicating with the retailers but not with the consumers.

Bad info. The shopper spots a date on a product, and let's suppose it's a date gone by. He or she assumes the date means one of two things—(1) The date the product was put in the package; or (2) The date on which the product has reached its peak as quality goes.

In the first assumption, the buyer might put the product in the shopping cart but has no information on which to judge how long the product will be good to eat.

In the second assumption, the shopper might not buy the product at all, believing it's already gone bad. In reality, he's reading the "pull date," when retailers should remove the product from the shelf. However, the pull date allows plenty of time for the consumer to buy and store the item before serving it.

Consumer left out. In short, terms like "pull date" and "sell by" (see our glossary) make sense to the retailer but aren't worth much to the consumer in making buying decisions.

As for storage instructions, the ERS study found they were not given frequently with the exceptions of bacon, luncheon meats, and franks.

Researchers pointed out that both the advocates and opponents of open date labeling have emphasized the need for proper handling to safeguard product quality regardless of the date on the package. Yet, instructions for storing the product at home were provided for only 3 out of 10 of the product groups listed in the survey. Both time and temperature are crucial to product quality, and a date alone does not give consumers the information they need to make a judgement.

More findings. Down to the specifics, what ERS gleaned in the numbers column of its survey of several hundred food processors.

About 42 percent of those who responded to the survey said they did offer products that are "open dated" for the consumer. Large firms were twice as apt to use open dating than small firms.

Most firms—two-thirds—began open dating in the late 1960's; about a fifth began after 1972.

Open Glossary on Open Dating

"Open dates"—those that can be easily read and understood by the shopper—come in four main varieties:

Pack date. The date of final processing or packaging.

Pull date. The last recommended day of retail sale that allows enough time to safely store and use the product in the home; i.e., the date the item is pulled from the store shelf.

Quality assurance date. The date after which the product is not likely to be a peak quality. Examples: "For maximum enjoyment, use before _____," or "Best when used by _____."

Expiration date. The last day the product should be used to assure quality. It's the end of the product's useful life, and is generally expressed, "Do not use after _____."

More than 7 out of 10 companies said they open dated refrigerated foods. By contrast, only 15 percent mentioned baked products, 13 percent frozen products, and less than 10 percent listed canned, fried, and fresh goods.

Dairy products were the most likely candidates: Almost half of the firms listed fluid dairy items, and about a third gave nondairy products. About a fourth of the firms mentioned a product from the meat, poultry, and fish category.

Pull date favored. Most popular date? The pull date. Half the respondents said it was the only date they used. Small consolation to the consumer, however. A fifth of the firms indicated they used different types of dates on different products.

In other words, the shopper can't even be sure the dates he sees will have the same meaning among the products of the same firm. Moreover, only a tenth of all respondents said they use words of explanation on any of their open dated products. Less than half the respondents said they provided storage information along with the date information. About a third gave storage instructions for all open dated products, and the remainder "sometimes" did so.

Rating consumers. Consumer reaction—for better or worse? A third of the processors described consumer reaction as generally good. "Consumers are enthusiastic"; "want more of it"; and "have more confidence in their purchases." However, quite a number of processors said consumers were "indifferent . . . consumers' interest had waned . . . consumers were aware but comment was negligible."

Type of date used by the processor didn't make much difference. Users of quality assurance dates were a bit more inclined to feel consumer response was negligible, while those who used expiration dates tended to say response was generally good. But only 13 percent of the respondents used quality assurance dates and only 12 percent used expiration dates.

Do processors favor open dating? In general, yes. About a fourth of the firms said the system helped them in rotating products on the shelves, in simplifying quality control, and in helping store employees.

The pluses. About a fifth of the firms commented on the benefits to the consumer: assurance of freshness, confidence in the product and merchant, and the fact that consumers want and are entitled to this information. Yet about the same proportion of respondents gave open dating a qualified endorsement: a good idea for some products . . . could be of value if understood by the consumer . . . consumers should exercise the right temperature control after getting the foods home.

Fifteen percent came out against open dating. About the same number listed a maze of problems, like selective buying by shoppers (they cast aside the items with older dates); confusion arising from lack of a uniform system; and the costs of making the system work.

[Based on "Food Processing and Open Date Labeling," by Eileen F. Taylor, National Economic Analysis Division, article in *National Food Situation*, NFS 155, February 1976.]

Rural Rental Blues... and What to do About Them

If you can't afford a house these days, you can always rent—that is if you plan to live in an urban area. But if you want to live in the country, you may be out of luck.

Certainly, if a modern apartment is your goal, better stick to the city in most places. Rental houses in the country may be a bit more abundant than apartments, but again the odds are not in your favor. Only one-fourth of the occupied rural housing is being rented, versus two-fifths in urban areas.

Let's say you're fortunate enough to find a house for rent in the country. What will it be like? Chances are it will be old and maybe deteriorating. Over two-thirds of the rental units in rural areas were built before 1950.

In addition, you could find yourself drawing buckets of water from the well or making trips to the outhouse, as almost one-fourth of these houses lack complete plumbing.

A bleak picture and a vicious cycle—that's what it adds up to not only for the "outsider" seeking a rental house, but also for the people already living in a rural community.

Industries often shy away from areas that don't offer good quality housing, including rental housing. As a result, the community misses out not only on the economic boost industry can bring, but also watches its youth leave the area in search of jobs and homes.

The cycle is not unbreakable, though. Community housing trusts or nonprofit housing organizations are being used to get new rental dwellings.

However, before any commitments are made, the feasibility of such an enterprise should be checked out thoroughly. And ERS has some pointers, based on a study of existing and proposed rental apartments—low-rise buildings, duplexes, and fourplexes—in western Oklahoma.

The first step a nonprofit organization or private entrepreneur would want to take, says the study, is to estimate demand for rental housing. That's best done through a survey to determine: (1) the number of households in the area who would be interested in renting and (2) their family size and income. In addition, occupancy and rental rates of any existing rental units in the area (or a comparable place) should be checked out.

If the survey indicates sufficient demand, the next step is to estimate capital requirements and operating costs for a rental project. To figure capital needed, multiply average construction costs times the number of units needed, times a current construction cost index.

Using this formula, the average capital needed per apartment for a fourplex in western Oklahoma was $12,711 in 1974.

Operating costs are likewise computed by multiplying the number of units times average operating costs per unit, times the most recent consumer price index.

From the study, the average annual operating cost per apartment in the fourplexes in 1974 was $463. This cost did not include utilities.

In planning a rental housing venture, a cost tip to consider is that average construction costs for fourplexes are higher than for low-rise apartments. This difference was approximately $1,000 per apartment for the units in the study.

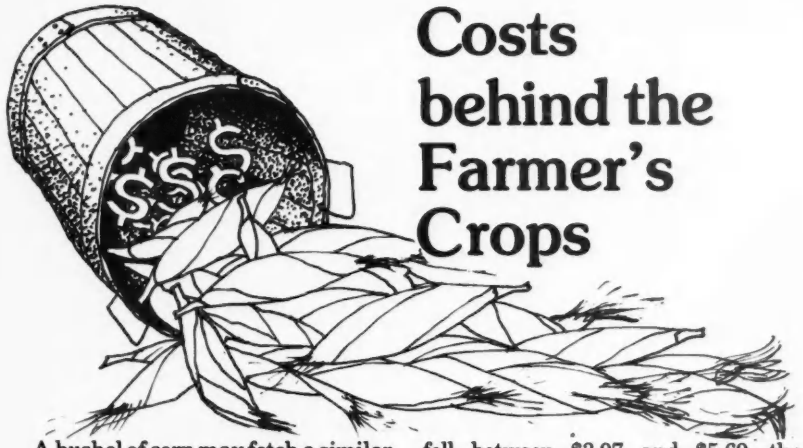
However, cost shouldn't be the sole determinant in deciding which type of structure to build. Contractors should also consider such things as local acceptability, availability of land, and number of potential aged tenants (who may not be able to climb stairs easily).

In the final analysis—after a housing need and all costs have been determined—the monthly rental charge necessary to cover costs must be one that potential tenants are willing and able to afford. If the rent will be too high, perhaps the project should be held off until more favorable financing—lower interest rate, longer repayment period, or higher down payment—can be found, thus lowering annual costs.

[Based on manuscript, "Feasibility Analysis of Establishment of Rental Apartments in Rural Communities," by Joseph F. Schmidt and Gerald A. Doeksen, Economic Development Division, stationed at Oklahoma State University, and Jack Frye, Extension Service.]

A small town's answer to the demand for rental housing.

Costs behind the Farmer's Crops



A bushel of corn may fetch a similar price in several markets, but the money farmers shelled out to grow that corn is another story.

At the request of Congress, ERS did a study to find out what it costs the farmer to produce corn and eight other major commodities. Data were based on conditions in 1974, a bad year as weather went. Nonetheless, the findings give a good idea of how States and regions stack up against one another when it comes to production costs.

According to the study, the American farmer's direct expenditures for a bushel of corn averaged $1.31. Management and overhead costs boosted the tab to $1.62.

Including the farmer's land investment (depending on which accounting method is used), the total cost jumped to $2.06-$2.77 a bushel.

Behind the national averages, however, were some wide regional differences. Direct production costs per bushel of corn were lowest in the Brown Loam region of north-central Mississippi and western Tennessee ($1.19), and highest in north-central South Dakota and central North Dakota ($2.60). The higher costs in the Northern Plains reflected poor yields due to drought.

Costs of producing soybeans seesawed within and among regions. Excluding land costs, over half of the beans were grown for less than $2 a bushel and another 35 percent for $2 to $3.

Land values figured in, the average cost to the American soybean farmer fell between $3.97 and $5.69—the widest range for any of the crops studied.

Direct outlays per bushel of soybeans were highest in the Southeast, where costs hit over $3. Soybeans were the cheapest to produce in eastern Nebraska and western Iowa, with direct expenses averaging around $1.60 a bushel.

Two other oil crops—flaxseed and peanuts—were examined in the study. National figures were not given, however, because of the small sampling. Flaxseed did show a lot of variability in production cost—even more so than soybeans—because of greater extremes in flaxseed yields.

Direct production costs for wheat were estimated for three classes—winter, durum, and spring. Durum was found to be the most costly to produce, at $2.34 a bushel, followed by spring at $1.90, and winter, at $1.45.

Labor, custom services, and irrigation charges were heaviest for winter wheat, but durum and spring wheat ran up higher bills for power, equipment, and material. Durum and winter had the steepest overhead and management costs.

Production costs differed sharply between the "durum triangle" of North Dakota and the western North Dakota-northeastern Montana producing areas. Although adverse weather crippled yields throughout most all of the area, the "durum triangle" was hardest hit. It had the highest costs per bushel—$2.49.

The Northern Great Plains—the heart of spring wheat production—was also hit by adverse weather, thus pushing its per bushel costs to $2.24. Production outlays in the Pacific Northwest, at $1.33, were lowest.

Since winter wheat is grown under so many conditions and cultivation practices vary widely, the contrasts in production costs make comparisons difficult. However, production costs were generally lower in the North Central States ($1.31) than in the major winter wheat area—the Central and Southern Plains ($1.49).

Out-of-pocket expenses for the grain sorghum farmer were $1.34 a bushel, plus 32 cents for overhead and management costs. With the land values figured in, the cost toted up to $1.98-$2.51 a bushel.

Again, there were regional variations in production costs. The severe drought that hit the Texas High Plains cut yields so drastically that production costs per bushel there were the highest in the Nation—$2.13. In central and southeastern Texas, however, costs ran considerably below the national average—$1.13.

The barley farmer was out $1.59 a bushel, including management and overhead expenses. Land allocations pushed the figure to $1.99-$2.50.

Barley farming proved to be the most costly in southeastern Idaho ($1.65) with the Northern Plains—where most barley is grown—not far behind, at $1.55. Poor yields in eastern North Dakota and northeastern South Dakota were mainly responsible for the high cost in the prime barley area.

Production costs for cotton were unusually high in 1974, because of nature's capriciousness in thwarting yields per acre.

Including land values, the 1974 cotton crop cost the farmers 41-48 1/2 cents per pound of lint to produce. In the Midsouth, bad weather led to late planting, poor boll set, and delayed harvesting; insect infestations compounded the problem. Drought in Texas forced some farmers to abandon their fields, while fall rains further cut yields for those who hung on.

[Based on *Costs of Producing Selected Crops in the United States, 1974,* Economic Research Service, Senate Committee Print-63-092.]

Men & Milestones

BELOIT, WISCONSIN, 1878—**John F. Appleby** *demonstrates his twine binder in the rye fields of Parker and Stone.*

A history-making event took place when John Appleby showed how his twine binder worked with the Marsh harvester. For more than 50 years until the combine came along, Appleby's invention enabled farmers to tie grain in bundles so that it could be readily gathered for threshing.

Appleby was born in Westmoreland County, N.Y., in 1840. Five years later his family moved to Walworth County, Wis., where he watched his neighbors laboriously harvest their grain, tying the bundles by hand.

In 1858, young Appleby developed a knotter from an apple bough. It resembled a bird's beak, which opened to receive the cord and then tied a knot in it. However, the knotter by itself remained a curiosity exhibited at county fairs at the time.

After the Civil War, Appleby continued to work on farm machinery, and in 1874 he produced a wire binder. Farmers refused to adopt the contraption. There was always the chance that the wire would jam the threshing machine, and even when cut up in small pieces, the wire endangered cattle eating the straw.

A twine binder, on the other hand, skirted these problems, since threshers could easily chop the twine. The remnants, as natural products, could easily pass through the animal's digestive system.

Reverting to his original knotter, Appleby developed a twine binder that he mounted on a Marsh harvester.

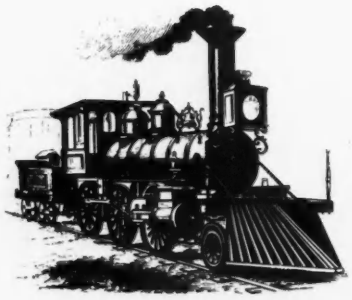
Major harvesting machine manufacturers quickly obtained licenses to the Appleby invention. Soon it was heralded as one of the important agricultural inventions of the century.

Appleby sold his rights to the device within a few years and moved to Chicago. Although he developed a cotton picker later, it never became a commercial success. He died November 8, 1917.

On October 10, 1926, hundreds of people gathered on a farm near LaGrange, Wis., for the unveiling of a marker in recognition of the original apple bough knotter.

[Special material from Vivian D. Wiser, National Economic Analysis Division.]

Smooth Sailing Ahead for Farm Shipments



Good news for farmers and shippers—the tracks seem clear for commodity shipments in months ahead as economists cast a generally optimistic look at agriculture's share of transportation services in 1976.

Of course some shippers in areas with bumper grain crops could face railcar shortages in the post-harvest season as they did in 1975. But last fall's unusually favorable weather helped speed the harvest and added to seasonal demand for transportation equipment. And our transportation system is currently better equipped to handle large export movements than it was when major bottlenecks occurred a few years ago.

Covered hopper cars—larger and more efficient than boxcars—now carry most of the grain moved by rail, and railcar location information systems have been improved. Car shortages are not a concern in coming months. With weekly variations, railcar loadings of grain typically decline seasonally through May until the new harvest begins.

Also, barge shipments of grain in 1975 were up by a fourth from 1973 and 16 percent above 1974, lessening demands on the railroads. And barge grain traffic during the first 5 weeks of this year was running about 50 percent heavier than for the same period in 1975.

At major port areas, the current general adequacy of the world ocean shipping fleet and the U.S.-U.S.S.R. agreement on shipping arrangements have tended to minimize potential stumbling blocks for grain exports.

Barring unforeseen events, the supply of trucks for commodity movements should meet agriculture's needs in 1976. Economists also expect an adequate barge supply, but note that some equipment could be drawn away from agricultural traffic if demand for barges from the rest of the economy—coal movements, for example— increased greatly.

Conditions that could combine to tighten up the grain transportation network include some additions to carryover on farms and at local elevators, another heavy harvest, strong export demand, and a sharp upsurge in the general economy.

Larger local stocks than in the past 2 years could reduce storage space for the new crop and cause some additional grain movements at harvest. A faster paced general economy would spur competition for railcars now available for carrying agricultural commodities. Labor problems are another potential source of disruption.

Of course, there's also the question of price as well as supply, and transportation costs are expected to go up in the year ahead. December 1975 rail rates for farm products were 15 percent above a year earlier.

Another general 7-percent hike has been approved, subject to further investigation by the Interstate Commerce Commission. Railroads are to give 15 days notice before using the higher rate.

Also, the recently enacted Railroad Revitalization and Regulatory Reform Act of 1975 allows carriers considerable freedom to adjust rates on specific commodities up or down by 7 percent during the next 2 years.

Truck and barge rates are generally expected to trend upward with higher labor and other costs. The Teamsters Union will negotiate a new contract with motor carriers in 1976.

[Based on special material from Edward I. Reinsel, National Economic Analysis Division.]

Prices Dip for Edible Fats and Oils

With most commodities continuing to eat away at the food dollar, it's good to know that a few items will actually cost less this year. Margarine, lard, vegetable oil, and shortening will all have lower price tags than in the past 2 years, thanks to record supplies and a gradual recovery from the economic recession.

Worldwide production of all fats and oils for 1976 is forecast at 49 million metric tons, up 7 percent from last year. This is about double the 1965-75 trend growth rate.

Last year American consumers cut back their purchases of these items, due to high prices and the downturn of the economy. The reduction in demand caused prices to fall.

This year, however, with the anticipated upturn in economic activity, a resumption in the growth of consumer incomes, and lower prices, consumption of fats and oils should be up.

The U.S. typically produces about a fourth of the world's fats and oils and accounts for a third of total exports. Most of the output is in soybean production. The 1975 crop of 41.4 million tons was a fourth larger than 1974's crop, and with larger carryin stocks, total supplies for 1975/76 are projected at 46.4 million tons, 8.6 million more than the previous year's.

World production of tallow and greases—mainly inedible and used in animal feeds, fatty acids, soaps, lubricants, and other industrial uses—is projected at 4.7 million metric tons, about the same as in 1975, but down somewhat from 1974. The slight decline in U.S. output, which accounts for over half of the world's total, is due to lighter slaughter weights in cattle and reduced hog slaughter.

The U.S. continues to be the world's largest producer, consumer, and exporter of tallow and greases—in 1974 we shipped over 70 percent of the world's total exports. This year our exports will face keener competition than ever before, due to increased overseas supplies of vegetable oils, particularly low-priced coconut and palm oils.

A little over a year ago, U.S. tallow was the cheapest fat or oil available in large volume in the world, selling 50-60 percent below soybean, palm, and coconut oils. Now, the prices for soybean and palm oils have dropped sharply, and they're only slightly more expensive than tallow. The price of coconut oil, on the other hand, hit rock bottom, and it's now one of the cheapest oils in the world, selling $35 per ton below U.S. tallow in Rotterdam.

[Based on the article, "World Supplies of Fats and Oils Record Large for 1976," by George W. Kromer, Commodity Economics Division, in *Render Magazine*, December 1975.]

Soviet Consumers Face Agricultural Austerity

Soviet consumers face a period of relative austerity for agricultural products, according to the U.S.S.R.'s tenth Five-Year Plan which covers 1976 to 1980.

The worsened agricultural outlook, after the poor 1975 crops, could lead to substantial trade shifts in 1976 on many commodities. Agriculture's performance also dampened the overall economic performance in 1975—the last year of the ninth Five Year Plan—and clouded prospects for the 1976 economy.

Gross agricultural output fell sharply in 1975. The 1976 planned growth of 7 percent above the 1971-75 average will require a very sharp recovery in crop production, since livestock output may fall considerably.

The U.S.S.R. announced that 1975 grain production was 140 million metric tons—more than 75 million tons short of plan, 65 million tons below the long-term 20-year trend, and 55 million below 1974 results.

(Continued on page 22)

This year, a 14-percent increase (above the 1971-75 average) is called for, implying a target of about 205 million tons.

The massive grain imports that the Soviets are making to offset the shortages may be straining Soviet port facilities and the grain-handling system. From July 1975 through June 1976, the U.S.S.R. is expected to import 27 million tons of grain from world suppliers. Even with the imports, feed use of grain is expected to decline about a fourth during that period, forcing livestock cutbacks.

As of January 1, 1976, the number of Soviet hogs dropped 20 percent, while poultry on collective and state farms was off 8 percent, compared with 1975 levels. Cattle numbers were still up 2 percent.

Looking at the new 1976-80 Five Year Plan, top priority is assigned to expanding feed production, not only grains, but also high-protein crops and roughages.

Grain production at an average of 215 to 220 million tons is called for in the plan, which is a reasonable goal, according to USDA, if there is an even pattern of good and bad weather during the period.

Despite the emphasis on feed production goals, planned livestock growth is weak. The 1976-80 average goals for meat and milk production are only slightly above the original 1971-75 goals.

The relatively low livestock production goals could dampen U.S. grain trade prospects. Slow rebuilding of livestock herds would tend to restrain grain import needs. However, the new 5-year grain agreement between the U.S. and the U.S.S.R. puts the U.S. in a strong position to maintain annual grain exports of 6 to 8 million tons to the Soviets. Also, an implication in the plan is that the Soviets may try to bolster their grain reserves.

For the Soviet consumer, the 1976-80 period may entail a higher demand for livestock products than the supply can provide. Wages are scheduled to increase 16 to 18 percent. A recent study suggests that for each 10-percent increase in Soviet per capita income, demand for meat rises about 7 percent, and 6 percent for butter.

[Based on special material provided by David M. Schoonover, Foreign Demand and Competition Division.]

Recent Publications

Single copies of the publications listed here are available free from The Farm Index, Economic Research Service, Rm. 1664–So., U.S. Department of Agriculture, Washington, D.C. 20250. However, publications indicated by (*) may be obtained only by writing to the experiment station or university. For addresses, see July and December issues of The Farm Index.

Agricultural Statistics, 1975. Statistical Reporting Service.

A handy reference tool, this book brings together several statistical series now being published in a number of USDA publications. Detailed information is given on agricultural production, prices, supplies, consumption, costs, and income. In addition, data are also included for such areas as soil conservation practices, consumer food programs, rural electrification, and life expectancy for major appliances. Note: Order this publication from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. The cost is $5.15.

High-Yielding Varieties of Rice in the Philippines: Progress of the Seed-Fertilizer Revolution. L. Jay Atkinson, Foreign Demand and Competition Division, and David E. Kunkel, Foreign Development Division. FAER-113.

About half the lowland rice area in the Philippines was planted to high-yielding varieties (HYV's) in crop year 1969/70. According to this report, yields averaged 20 percent higher for HYV's than for other varieties in the irrigated area and about 10 percent higher in the non-irrigated lowlands. One-third of all HYV growers used no commercial fertilizer, and one-third used no chemicals for weed, pest, or disease control.

Supplement for 1974 to Food Consumption, Prices, and Expenditures. National Economic Analysis Division. AER-138.

This supplement revises and updates through 1974 the statistical information previously published in 1968. In its 118 tables, the report shows trends in food consumption levels, wholesale and retail prices, exports, and consumer expenditures for food.

Butter and Cheese: Sales Changes Associated With Three Levels of Promotion. Peter L. Henderson, National Economic Analysis Division. AER-322.

Conducted in cooperation with the United Dairy Industry Association, this study tests the consumer buying response to three different levels of advertising campaigns. Results showed that during May 1972-July 1973, for every 6-9 cents invested in promotional activities for cheese, sales rose by 15-18 percent. At the 9-cent promotion level, butter sales gained about 4.5 percent, but showed no gains at lower levels, probably due to the counter effect of promotions for margarine.

Population Change in Nonmetropolitan Cities and Towns. Glenn V. Fuguitt and Calvin L. Beale, Commodity Economics Division. AER-323.

Patterns of population change between 1950-60 and 1960-70 are analyzed for U.S. nonmetropolitan incorporated cities and towns. Results show that although the growth rate was less rapid than in the metropolitan areas, it was more rapid than in the unincorporated nonmetro areas.

Economic Trends

Item	Unit or Base Period	1967	1975 Year	1975 Jan.	1975 Nov.	1975 Dec.	1976 Jan.
Prices:							
Prices received by farmers	1967=100	-	181	172	185	187	186
Crops	1967=100	-	194	201	188	188	188
Livestock and products	1967=100	-	172	153	184	187	185
Prices paid, interest taxes and wage rates	1967=100	-	185	181	189	189	191
Family living items	1967=100	-	177	173	182	182	183
Production items	1967=100	-	188	182	192	192	193
Ratio [1]	1967=100	-	98	95	98	99	97
Wholesale prices, all commodities	1967=100	-	174.9	171.8	178.2	178.7	-
Industrial commodities	1967=100	-	171.5	167.5	175.4	176.1	-
Farm products	1967=100	-	186.7	179.7	191.7	193.8	-
Processed foods and feeds	1967=100	-	182.6	186.4	182.6	181.0	-
Consumer price index, all items	1967=100	-	161.2	156.1	165.6	166.3	-
Food	1967=100	-	175.4	170.9	179.8	180.7	-
Farm Food Market Basket: [2]							
Retail cost	1967=100	-	173.6	168.7	177.8	178.8	-
Farm value	1967=100	-	186.8	173.6	188.0	189.0	-
Farm-retail spread	1967=100	-	165.3	165.6	171.3	172.3	-
Farmers' share of retail cost	Percent	-	42	40	41	41	-
Farm Income: [3]							
Volume of farm marketings	1967=100	-	-	113	157	-	-
Cash receipts from farm marketings	Million dollars	42,817	-	7,407	10,115	-	-
Crops	Million dollars	18,434	-	4,199	3,954	-	-
Livestock and products	Million dollars	24,383	-	3,208	6,161	-	-
Realized gross income [4]	Billion dollars	49.9	-	-	-	-	-
Farm production expenses [4]	Billion dollars	38.3	-	-	-	-	-
Realized net income [4]	Billion dollars	11.6	-	-	-	-	-
Agricultural Trade:							
Agricultural exports	Million dollars	-	21,894	2,459	2,176	1,960	-
Agricultural imports	Million dollars	-	9,295	811	805	768	-
Land Values:							
Average value per acre	Dollars	[6]168	[7]354	-	-	-	[8]381
Total value of farm real estate	Billion dollars	[6]181.9	[7]370	-	-	-	[8]398
Gross National Product: [4]	Billion dollars	796.3	1,499.0	-	-	1,573.2	-
Consumption	Billion dollars	490.4	963.2	-	-	998.7	-
Investment	Billion dollars	120.8	183.3	-	-	208.3	-
Government expenditures	Billion dollars	180.2	330.9	-	-	343.8	-
Net exports	Billion dollars	4.9	21.5	-	-	22.4	-
Income and Spending: [5]							
Personal income, annual rate	Billion dollars	626.6	1,246.0	1,202.6	1,295.9	1,301.1	-
Total retail sales, monthly rate	Million dollars	26,151	48,733	46,006	50,350	52,098	-
Retail sales of food group, monthly rate	Million dollars	5,759	10,999	10,672	11,299	11,431	-
Employment and Wages: [5]							
Total civilian employment	Millions	74.4	[9]84.8	[9]84.6	[9]85.3	[9]85.5	-
Agricultural	Millions	3.8	-	[9]3.4	[9]3.3	[9]3.2	-
Rate of unemployment	Percent	3.8	8.5	8.2	8.3	8.3	-
Workweek in manufacturing	Hours	40.6	39.4	39.2	39.9	40.3	-
Hourly earnings in manufacturing, unadjusted	Dollars	2.83	4.81	4.67	4.93	4.99	-
Industrial Production: [5]	1967=100	-	114	114	117	118	-
Manufacturers' Shipments and Inventories: [5]							
Total shipments, monthly rate	Million dollars	46,449	-	79,234	87,018	-	-
Total inventories, book value end of month	Million dollars	84,655	-	151,624	146,712	-	-
Total new orders, monthly rate	Million dollars	46,763	-	75,068	86,007	-	-

[1]Ratio of index of prices received by farmers to index of prices paid, interest, taxes, and farm wage rates. [2] Average annual quantities of farm food products purchased by urban wage earner and clericalworker households (including those of single workers living alone) in 1959-61—estimated monthly. [3]Annual and quarterly data are on 50-State basis. [4]Annual rates seasonally adjusted 1st quarter. [5]Seasonally adjusted. [6]As of March 1, 1967. [7] As of March 1, 1975. [8]As of November 1, 1975. [9]Beginning January 1972 data not strictly comparable with prior data because of adjustment to 1970 Census data.

Source: U.S. Dept. of Agriculture (Farm Income Situation, Marketing and Transportation Situation, Agricultural Prices, Foreign Agricultural Trade and Farm Real Estate Market Developments); U.S. Dept. of Commerce (Current Industrial Reports, Business News Reports, Monthly Retail Trade Report and Survey of Current Business); and U.S. Dept. of Labor (The Labor Force and Wholesale and Consumer Price Index).

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